ABSTRACT

This invention provides a novel acid DNase (DLAD) which is an endonuclease capable of cleaving DNA independently from divalent cations, under acidic conditions, which retains its activity in acidic to even neutral pH range, and which is not inhibited by G-actin. This invention also provides a DNA encoding the enzyme, an expression vector containing the DNA, and a host cell transformed with the expression vector. Furthermore, a pharmaceutical composition containing DLAD, DLAD expression vector or a host cell transformed with the expression vector as an active ingredient is provided. The pharmaceutical composition is useful as a therapeutic agent replacing DNase I for cystic fibrosis, and can provide a new approach for the prophylaxis and treatment of infectious diseases.